

Research on the Mechanism and Development Path of Green Finance Enabling Rural Revitalization under the Goal of "Double Carbon"

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Abstract

Green development is the only way to implement the strategy of Rural Revitalization. The dynamic mechanism of green financial innovation serving rural revitalization is in line with the theme of green development. Green financial innovation can effectively promote industrial prosperity, brew civilized rural style, achieve effective governance and create livable ecology, and finally achieve prosperity. This paper aims to study green financial instruments and derivatives represented by carbon finance under the goal of "double carbon". Then through the analysis of the dilemma of today's green financial market, this paper studies the mechanism of green finance enabling rural revitalization, and proposes that we should vigorously innovate and develop carbon financial derivatives based on forest deduction projects. Finally, it better explains how green low-carbon finance can achieve the core goal of Rural Revitalization under the background of urban and rural integration and development.

Keywords

Green finance, Rural Revitalization, Low-carbon development, Financial innovation.

1. Introduction

General Secretary Xi Jinping first put forward the strategy of Rural Revitalization in the report of the nineteenth National Congress in 2017, and then the report of the 20th National Congress of the Communist Party of China in 2022 once again emphasized the need to promote rural revitalization in an all-round way. The strategy of Rural Revitalization has been mentioned in many important meetings and has become a national strategy related to whether China can realize the Chinese dream of great rejuvenation. The report of the 20th Party Congress pointed out that "the most arduous and arduous task of building a socialist modern country in an all-round way is still in the countryside.". The No.1 document of the Central Committee of the Communist Party of China and the State Council on the implementation of the strategy of Rural Revitalization in 2018 clearly points out that rural revitalization should be led by green development. With the promotion of the Rural Revitalization Strategy, green financial innovation has also ushered in an opportunity. As the key content of national financial work, green development is the main support for the effective implementation of the Rural Revitalization Strategy, and has very rich connotation. While China has gradually become a world economic power, a series of ecological and environmental problems have gradually emerged, and carbon finance, as an important branch of green finance, can effectively resolve the contradiction between economic development and resources and environment, and realize the transformation of economic growth mode from extensive to intensive.

On September 22, 2020, the Chinese government proposed at the 75th United Nations General Assembly: "China will increase its national independent contribution, adopt more effective policies and measures, strive to reach a peak in carbon dioxide emissions by 2030, and strive

to achieve carbon neutrality by 2060." as an indispensable and important factor in rural development, "double carbon" is deeply integrated with the Deepening Rural Revitalization Strategy. Economic development under the goal of "double carbon" is no longer at the expense of the environment, requiring that while pursuing high-quality economic development, we should build a solid basic barrier of the ecological environment and make it the top priority of Rural Revitalization. "Carbon finance", as an important part of green finance, came into being, which is of great practical significance for the in-depth implementation of the 20 word general requirements of the Rural Revitalization Strategy. At the same time, green finance shows unique advantages in implementing the "five in one" strategy in rural areas and helping the process of rural revitalization, which provides a broad stage for the great development of Rural Revitalization Strategy.

In view of the mechanism of green finance enabling rural revitalization, foreign studies currently focus on the role of green finance in promoting rural industrial development and environmental protection from various perspectives. Han (2019) believes that green finance promotes poverty alleviation and promotes rural revitalization by supporting the common development of agriculture, commerce and ecology; Zieliń SK (2021) and others study the correlation between green finance promoting rural economic development and spatial structure improvement; Johnson (1989) and others focus on the key elements of the success of rural green financial innovation enterprises; Gil (2008) pays more attention to the role of environmental legislation in promoting both. Domestic research can be roughly divided into theoretical and empirical research. In terms of theoretical research, Guo Yuanzhi et al. (2019), Gong Siwen et al. (2019) and Li Erling et al. (2019) believe that green financial instruments can greatly improve the efficiency and utilization rate of resource allocation, drive the all-round green development of the economy, and promote the rational flow, distribution and efficient utilization of rural human, land and industrial factor resources; Other scholars have studied the support path of green finance for rural revitalization, such as an Guojun (2021), sun Xiao (2022) and Zhang Baiyang (2022), who have studied improving the efficiency of resource allocation through various products circulating in the green financial market; Zuo Zhenglong (2022) and Shang Xiwen (2021) take basic system construction and long-term strategy as the basic direction to study supporting and improving relevant market supervision mechanisms, laws and regulations; Wang Xiaoyin (2020) and Liu Gang (2019) used financial means to solve the problems of "agriculture, rural areas and farmers" through multiple channels, means and ways. In terms of empirical research, Yang Hui (2019) studied the green finance and Rural Revitalization development model of "Ganzhou model", believing that the construction of credit support and the development of financial education are the breakthrough points of Rural Revitalization; Yang Lin et al. (2019) analyzed the problems of rural green finance in Sichuan Province and innovatively put forward the green product system of "group mutual assistance"; Cheng Li et al. (2018) and Ouyang Hongbing et al. (2022) used quantitative methods to prove the impact of Green Finance on Rural Revitalization.

To sum up, the existing research at home and abroad has carried out a large number of theoretical and practical studies on the path of green finance to promote rural revitalization. At present, the domestic carbon financial market mainly focuses on industrial emission reduction projects, rarely involves low-carbon agriculture, and there are relatively few studies on the development of carbon finance to serve rural revitalization. This paper will carry out research and Analysis on the combination of green finance and rural revitalization, not only from the perspective of green finance promoting rural revitalization, but also focus on the interaction mechanism between the two, namely coordinated development; At the same time, the focus of this paper will be different from the industrial emission reduction projects in more previous research places, but focus on the combined development of low-carbon agriculture and rural revitalization, and put forward that we should vigorously innovate and develop carbon

financial derivatives based on forest deduction projects, which has certain theoretical innovation significance.

2. The Internal Mechanism of Green Finance Serving Rural Revitalization

2.1. Green finance promotes rural revitalization

If green low-carbon funds can flow into rural areas reasonably, it can effectively promote and guide the transformation of agriculture to low-carbon and green, so that rural areas can not only provide green agricultural products and ensure national food security, but also promote green agricultural science and technology investment, strengthen soil pollution control, develop experience agriculture and circular agriculture; Through the guiding function of green credit, intervening in agricultural production links can promote the organic connection between small-scale agricultural production and modern agriculture. At the same time, positive carbon financial innovation can effectively drive the investment and financing of low-carbon industries, and the research and development of carbon derivatives can extend the back end of the industrial chain; The proposal of carbon emission rights helps to strengthen the development of energy conservation and emission reduction technologies, thus expanding the front end of the industrial chain.

Green finance guides the flow of funds to agricultural production, transforms agriculture to low-carbon and green, promotes the orderly development of green science and technology investment and new agricultural industry, and thus drives the optimization, upgrading and structural adjustment of agricultural industry. At the same time, green finance is conducive to generating environmental protection cultural orientation in rural areas, promoting the organic unity of agricultural production and operation activities with rural cultural protection and inheritance, ecological environment conservation and sustainable utilization of resources, helping to cultivate civilized rural customs and establish the concept of rural green credit. In addition, the long-term development of green finance is conducive to correcting the deviation of government allocation of resources, optimizing the allocation of rural resources, promoting the development of new energy technologies, optimizing the energy consumption structure, improving the efficiency of rural infrastructure use, and efficiently promoting livable ecological construction, so as to achieve rural revitalization.

In addition, the innovation of green financial system also has obvious incentive effect. The people's Bank of China can carry out institutional innovation and actively give full play to the leverage effect of credit policy support for re lending. At the same time, we should innovate the evaluation system of the guiding effect of green loans in rural revitalization, and allocate more preferential funds to financial institutions that meet the requirements on the basis of reducing the assessment criteria for inclusive financial investment. Combine green finance with fiscal and tax support to give financial discount to green loans serving rural revitalization; Local governments reward and subsidize payments to support rural ecological construction, thus encouraging more financial resources to flow to the countryside. Green financial innovation also has obvious individual behavior effects. When villagers receive green financial services, their economic behavior will also change, such as causing the increase of rural per capita consumption, per capita income and per capita output rate. When farmers' families have easy access to investment and financial services, their investment risk will decline and their investment portfolio will be further optimized, which will increase per capita consumption due to wealth effect; At the same time, green financing to rural families can effectively increase the length of villagers' education and increase the stock of rural human capital, so as to improve the per capita income and per capita output rate of families; When rural groups that have not yet lifted out of poverty or return to poverty after lifting out of poverty obtain green financial accounts, if their use increases, their consumption, investment level and income level will also

increase significantly. Then, it is not difficult for us to find that green financial innovation and the provision of green financial services for rural residents can effectively enhance the welfare of villagers, and is an important way to achieve poverty alleviation, prevent return to poverty, and ultimately move towards affluence.

2.2. Rural Revitalization drives the development of green finance

Under the background of socialist construction with Chinese characteristics in the new era, green financial innovation can help rural revitalization; On the contrary, the implementation of the Rural Revitalization Strategy will fully stimulate the vitality of all elements of the "three rural" system, and also provide opportunities for green financial innovation. The introduction of a series of institutional arrangements to support rural revitalization also provides an opportunity for the innovation of green financial system. The establishment of institutional outlets guided by green development can promote the innovation of financial institutions. The emergence of resource and environment exchanges and trading centers provides experience for the innovation of green financial market. The emergence of a large number of financial products focusing on controlling rural environmental pollution and developing green industries will further enrich the connotation of green financial product innovation.

At the same time, the optimization of ecological environment means that carbon emissions will be greatly reduced, thus promoting the increase of carbon emission reduction projects and the development of green finance to a higher stage; Civilized rural style can create a good environmental protection and low-carbon atmosphere, improve the support of the government and villagers for green finance, and also provide a good low-carbon environmental protection environment for enterprise investment, so as to promote the development of green finance; Effective governance means not only good rural governance, but also good achievements in the development of green finance. Its positive feedback can bring high profits to green finance to the greatest extent and promote the development of green finance; With different tools and means, green finance has improved and promoted the all-round development of rural industry, ecology, civilization and governance, greatly improved the living standards of farmers, and then promoted the realization process of villagers' prosperous life. When villagers live a prosperous life, they have excess funds to invest in the financial market, accelerate the flow of capital in the financial market, and then promote the scale development of the green financial market. Therefore, green finance and Rural Revitalization interact and develop harmoniously.

3. The Dilemma of China's Green Financial Market

3.1. Single green low-carbon financing tool

General Secretary Xi Jinping has repeatedly stressed that financial instruments such as green insurance, green bonds, green development funds, green stock indexes and related derivatives should be used to serve green development. This is a precursor to innovative green and low-carbon financing tools. However, due to the high risk and high cost characteristics of agriculture and the risk aversion tendency of financial institutions, as well as the fact that agricultural production is greatly affected by natural factors such as climate and season, its investment cycle is long and its income is relatively low, resulting in a serious shortage of green financial instruments. In terms of green bonds, the data in China Green Financial Development Report 2018 show that in 2018, the total issuance of green bonds in China has exceeded 280 billion yuan, the stock of green bonds is nearly 600 billion yuan, and the total bond market in China at the end of this year is 86.39 trillion yuan. It can be seen that green bonds account for very little, and most of the issuers are banks. In terms of green development funds, due to the late start, there are still restrictions on the low operation efficiency of development funds, the deviation of capital investment from the green orientation, the government led investment decision-

making, the low degree of marketization and the low participation rate of social capital. In terms of low-carbon financial instruments, the current carbon financial business is mainly concentrated in banking business, through the participation of commercial banks in cdm.p. projects, cooperation with world investment banks and international financial companies, consulting services, cdm. project financing and so on. Most of these businesses are at the bottom of carbon finance, and have not directly participated in international carbon trading, carbon financing activities, or carbon securities, carbon funds and carbon financial derivatives related to carbon trading in the international carbon financial market. In addition to carbon emission trading, China's carbon financial products trading is still blank in carbon financial derivatives.

3.2. Lack of green low-carbon financial market innovation

The circulation of any advanced financial product needs to rely on a perfect trading market, and carbon financial instruments are no exception. First of all, compared with the carbon trading markets of developed economies in Europe and the United States, there is still a large gap between the existing trading volume and trading volume of China's carbon trading market, sometimes there is no trading situation, and the market liquidity is not good. Sufficient, and mainly spot trading. Due to the serious lag of the development of carbon trading market, the perfect price discovery mechanism has not yet been formed, the carbon price information is distorted, and the development of carbon financial market is at a loss. Secondly, China's existing carbon trading market is still in the pilot stage, and the national carbon trading market is only about to start. Due to the lack of effective information communication and exchange, decentralized negotiations and partition have inevitably formed a situation of market separation and regional blockade, which reduces the efficiency of transactions. Moreover, the risk between trading markets has contagion characteristics, and the block carbon trading market will improve the dimension and probability of risk. Precisely because the development of China's carbon trading market is not mature, it is greatly affected by the carbon market in Europe and the United States. When the economy slows down, the pessimistic expectations of developed countries will lead to a decline in the demand for carbon emission quotas, triggering turmoil in international carbon trading prices, and China, without exception, weakens the ability of the domestic carbon trading market to resist external risks.

3.3. Lack of regulations on green low-carbon financial system

In terms of laws related to green low-carbon finance, because China's carbon financial market is mainly voluntary participation, there is no mandatory law to regulate, which is also an important factor for the lagging development of China's current carbon financial market. Except for the enactment of a renewable energy law in 2005, the state has not formulated relevant regulations in this field. The law undoubtedly has a positive impact on the utilization and development of renewable energy in China. In terms of specific systems and regulations, in addition to the measures for the administration of carbon emissions trading (Trial), which will be implemented in February 2021, there is still a lack of other specific rules for guidance, and supporting carbon verification, accounting and distribution documents are also urgently needed

Formulated and promulgated. Compared with the perfect legal system abroad, China still lacks a clear policy and legal basis for implementing the greenhouse gas emission reduction plan.

4. The Path Choice of Green Finance for Rural Revitalization

4.1. Innovative green bonds and green development fund tools

In addition to expanding investors' investment choices and enriching the types of carbon financial products, the more important thing is that its pricing function provides the possibility for the carbon financial market to explore a reasonable transaction price, and its hedging

function provides a guarantee for avoiding the transaction risks caused by price fluctuations in the carbon financial market.

First of all, we should clarify the property rights of forest resources on which carbon emissions are deducted. The property right system of carbon trading is the premise and foundation of realizing carbon trading. The implementation of EU carbon emission rights is to adopt a combination of free quotas and emission quotas to explore and gradually build a carbon trading property rights system. In China, if we give clear property rights to forests in strict accordance with the provisions of the forest law, and give forest operators the right to carbon absorption benefits of forest resources, and carbon emission enterprises pay, then carbon market trading will be the most efficient. According to the analysis of Li Yan (2020), through the forest resources trading model of product market, forest carbon sink resources can achieve a dynamic balance between supply and demand; The economic attributes of forest carbon sequestration resources in China not only have the attributes of public goods, but also meet the basic conditions for private property rights to trade. Therefore, as long as forest carbon sink resources can be accurately measured and reasonably allocated, the development of carbon financing tools has a realistic foundation.

Secondly, the development of forest carbon sinks can be traded in the market technology. Forest carbon sinks need to be quantified by certain technologies to enter the market, which requires increasing investment in the innovation of carbon financing tools. China's current Internet of things technology can effectively improve the operability of carbon sink trading. For example, the gradual enhancement of big data processing capabilities such as neural networks, the rapid development of radio frequency identification technology and the rapid improvement of the application level of remote sensing technology all help to enhance the reliability and real-time monitoring of ecosystems such as grasslands and forests, resolve the difficulties in the supervision and accounting of forest carbon sequestration projects, and improve the quality and efficiency of evaluation and verification, so as to provide technical support for the financialization of forest carbon sequestration market.

4.2. Creating an efficient green and low-carbon financial market

The emergence of carbon financial market provides a new topic for the innovation of green financial market. At present, we should accelerate the development of carbon financial market, tap the development potential of green financial market, and realize the integration of Rural Revitalization and carbon finance. Both local governments and countries should strive to improve and enrich the functions and types of carbon financial market products, accelerate the formulation of carbon financial laws and regulations, enhance the research and development of carbon financial products, and increase capital investment in carbon financial markets. Let financial instruments such as green insurance, green development fund, green bonds and green credit be organically combined with carbon finance to form a joint force of green financial innovation to serve rural revitalization. In addition, the development of green insurance market provides a broad space for green financial market innovation. As a kind of liability insurance, green insurance has the characteristics of stable cash flow, long duration and large capital stock. Its innovation can well serve rural revitalization projects with long investment cycle and large financing volume, such as green industrial parks and green circular agriculture. On the one hand, financial institutions should strengthen the innovation of green insurance business model and products, strengthen the capacity building and system building of green insurance market, and financial auxiliary institutions should actively promote and publicize green insurance business to promote the development of green insurance in the direction of standardization, marketization and scale; On the other hand, for large-scale risk projects, the innovative way of reinsurance can be introduced. At the same time, green financial market innovation is also a dynamic and developmental process.

4.3. Improve the legal system of green low-carbon Finance

To develop green low-carbon finance, we must have a perfect legal system. China should promulgate a special law as soon as possible to standardize the categories of tradable targets, participants, reward and punishment measures and the allocation principles of carbon emission quotas in the carbon financial market, and to clarify the initial allocation of carbon emission rights, their tradability and scarcity. Clear property rights are the premise of market transactions. At present, China can not clearly confirm the property rights of carbon sinks that can be certified under the framework of cdm.f. in the Kyoto Protocol, that is, a department or enterprise has the transfer, income, use and ownership of carbon sinks. If carbon sequestration property rights are not legally protected, carbon sequestration transactions will lose their due basis. At the same time, there should be a sound energy legal system to consolidate the legal basis for the operation of carbon finance.

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